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By-Herriott, Robert E.; Hodgkins, Benjamin J.

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Using a systems approach to determine the relationship between modernization and education, data were analyzed from questionnaire responses returned by the chief administrators of 1,124 public high schools. The schools were a selected sample of the schools attended by the 28,000 pupils included in the October 1965, educational supplement of the Current Population Survey of the U.S. Census. The American public school was defined as (1) a purposive organization with an institutional role of preparing students for participation in the larger society and (2) an open social system displaying a high degree of interaction with its environment. Schools were distinguished by 12 sociocultural context categories defined by two regional, three metropolitan, and two social class categories. School specialization was measured by the proportion of full-time faculty members holding at least a masters degree. Output was measured by the number of students continuing education after high school. Findings supported the study's primary hypothesis that the input-output relationship of a school with its sociocultural context varies systematically from one context to another, leading to the general conclusion that the product of the American school depends greatly upon the particular values and ideology of its sociocultural context. (JK)

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SOCIAL CONTEXT AND THE SCHOOL: AN ORGANIZATIONAL ANALYSIS*

Robert E. Herriott and Benjamin J. Hodgkins
Florida State University

Historically, the study of the school as a social organization has been a neglected area of empirical research.[1] Although many reasons exist for this oversight, of particular importance has been the tendency of past analysts of the school to utilize conceptual models derived from economic or social psychological assumptions.[2] In such instances the results have been somewhat disappointing from a sociological perspective, for the fundamentally social nature of the school as a formal organization has been overlooked.

The present paper seeks to avoid this limitation by advancing and testing an explanatory model of the American public school as an open social system in a highly modern and heterogeneous society. However, since both the theory and data to be presented here have been drawn from a larger work,[3] our presentation must of necessity be highly compressed. After providing an overview of our theoretical model, three specimen hypotheses generated by this framework are then tested using data from a large national sample of public senior high schools. Implications from this specimen test (and from our larger work) are drawn for both the sociological study of education and the reform of public education in contemporary America.

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*A paper presented at the 1968 Annual Meeting of the American Sociological Association, Boston, Massachusetts, August 29, 1968. The research reported herein was supported in part by the U. S. Office of Education through Grant No. OEG-2-6-062972-2095. Not to be quoted without permission of the authors.

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THEORETICAL CONSIDERATIONS

Formal Education in Modern Societies

The importance of education in modern societies is readily acknowledged in most literature dealing with social change and development. Educational variables are also frequently used in cross-cultural studies as indicators of the degree of development of a society.[4] The effect of modern development upon the role of formal education, however, has for the most part been considered primarily in a speculative manner. Its existence has usually been assumed from the demonstrated fact that as societies becomes more modern, literacy rates and the educational level of the population rise. The "why" and "how" of this covariation too often remains unspecified. It is our view that the underlying feature of this relationship between modernization and education is the dependence of technological development upon the social institution of formal education: a dependence important not only in terms of the transmission of technical knowledge[5] but also in terms of the development of an instrumental orientation amenable to the implementation of that knowledge.[6]

In modern societies, the only systematic attempt to instill this instrumental orientation occurs in formal education. Couched in terms of achievement based upon universal standards of performance, and affectively neutral evaluation in specific role contexts, mass formal education generally places the neophyte in a social milieu quite unlike his limited family experiences, but not unlike the social context in which he will spend his adult life.[7] By "adjusting" to the school milieu over a period of years the student internalizes the instrumental

orientation to social relationships necessary for successful performance as an adult in a rapidly modernizing society.[8] Thus, the institutional role of education can be viewed in terms of the social needs of modern industrialized society as they are reflected in the technical requirements and values associated with modern life.[9]

While several bases undoubtedly exist for examining the dynamics of this process, the insights of Max Weber on education as a bureaucracy seem particularly relevant. Weber suggests that "a rational and bureaucratic (modern) structure" of education best corresponds to the "ideal" means for imparting specialized training.[10] Thus, as a society becomes more modern the formal education system tends to become increasingly rational and bureaucratic in nature.

If one views formal education within a modern society in this manner (as being rationally constituted to fulfill an institutional role), it is relevant to ask how the inputs, structural characteristics, and outputs of formal education vary with the degree of modernization. To the extent that inputs and structural characteristics approach the bureaucratic ideal the outputs of the educational system may be expected to approximate the needs of modern society, thereby resulting in an "effective" formal educational system. With regard to inputs, for example, both the number and type of students in societies at early stages of modernization generally are not determined rationally in terms of modern social needs. The formal educational system of such societies tends, in Weber's terms, to emphasize a "pedagogy of cultivation" for the elite and not the specialized training and orientation necessary for modern

life.[11] Many ex-colonial African states are examples of this phenomenon.[12] In such cases the effectiveness of the formal system is low.

Such a view of the relationship between the degree of modernization and the effectiveness of education has generally been used to compare societies, but it can also be applied within a modern society. There is research, for example, which suggests that the process of modernization varies within American society in a manner similar to the variations more frequently noted among societies.[13] If this is indeed the case, it seems reasonable to expect similar variation in the effectiveness of the formal education system in terms of its development toward an ideally rational bureaucratic form.

The School as a Social System

We have chosen to consider the relationship of modernization and education utilizing a general systems approach which focuses on education at the organizational level. At this level, the institutional role of education may be identified as the extrinsic geneotypic function of the organization, the "purpose" of the organization vis a vis the larger society.[14] For systems theory generally, and organizational analysis in particular, the concept of "purpose" is a complex, but highly relevant one. By purpose we do not imply an ultimate goal or end, nor do we mean the conscious intent of the organization's membership. Rather, organizational purpose vis a vis the larger society refers to the state of organizational behavior consistent with its social institutional role. Thus, if we acknowledge the economic institution's social role as primarily that of

distributing goods and services, the "purpose" of business organizations may be defined accordingly. So also, if the primary social purpose of the institution of education in modern society is that of transmitting technical skills and an appropriate orientation for their implementation in adult life, the school as a social organization can be viewed analytically as a purposive organization consistent with that institutional role.

A second characteristic of importance to our systems approach is the perception of the school as an <u>open</u> social system. As described by Buckley,[15] Allport,[16] and Von Bertalenffry,[17] an open system is a set of elements: 1) in mutual interaction, 2) characterized by an input and output in energy, 3) existing in a homeostatic state wherein its input and output will not appreciably affect its form, 4) manifesting an increasing complexity over time, and 5) displaying a high degree of interaction with its environment. It is this final characteristic which is of particular importance in the discussion and analysis to follow for we shall attempt to articulate the effects of interaction with the environment upon the structure and functioning of educational organizations.

<u>The Environment of American Public Schools</u>

To understand the dependence of the American public school, as a social organization, upon its environment it is helpful to consider sociocultural changes in American society attendent to the modernization process. These changes can best be viewed in terms of changes in ideology and values.[18] Briefly, the most modern sectors of American society may be characterized ideally as manifesting a

universalistic value orientation, wherein instrumental performance on the part of the individual is valued and status granted based upon achievement. There beliefs about the worth of individual performance, in terms of abilities, effort and rewards are extolled in terms of their contribution to the larger society.[19] In contrast, less modern sectors of American society tend to have traditional values and ideology, characterized as expressing a particularistic value orientation, in that individuals, objects, or situations are appraised in a unique and relative sense, rather than in terms of universal achievement. In these sectors ideology is focused upon the sacredness of past events and the desirability of traditional behavior.[20]

If the above assumptions hold, the criteria sensitizing the organization to feedback from its environment will vary from one sociocultural context to another. The effect of this upon the public school can be anticipated in somewhat the following manner. In the more modern sectors of American society, universal values and ideology will lead to an emphasis upon the larger sociocultural needs of society. Such an emphasis will be reflected in the concern for the school regarding its production and adaptation. Conversely, the more traditional sectors of society will be more attuned to particularistic values and ideas associated with their local environments. In such settings school-community relations and the internal stability of the school will be of paramount concern in information feedback.

Further insight into the effects of differing sociocultural contexts upon the school as an open system can be gained by considering the different adaptation of schools within different sociocultural contexts. We would expect schools in the more modern sectors of American society to have more complex structures consistent with a more highly specialized division of labor among their membership. In contrast, schools in more traditional areas would be less specialized, and would evidence a greater permeability from their local sociocultural environment.

There are, of course, many additional ways in which variability in the sociocultural context of schools could influence their organizational structure and functioning. The preceding discussion is illustrative rather than exhaustive. We would now like to turn to a brief empirical test of selected aspects of our general reasoning.

METHODOLOGICAL CONSIDERATIONS

Research Design

During the past several years we have been conducting a study exploring the general thesis noted above that the more modern the sociocultural context in which American public schools are located the more modern their structure, inputs, throughputs, and outputs.[21] In this paper we wish to present some specimen results of that study dealing with three context variables, one input variable and one output variable and focusing on public senior high schools. The three hypotheses which we shall test are as follows:

1. The more modern the sociocultural context of American public senior high schools the more specialized their inputs.

2. The more modern the sociocultural context of American public senior high schools the more effective their outputs.

3. The more modern the sociocultural context of American public senior high schools the stronger their input-output relationships.

The three sociocultural contexts which we shall consider are each major social dimensions within American society: 1) region, 2) metropolitan area, and 3) school neighborhood. Elsewhere, we have developed at length a discussion of how each dimension can be subdivided into social settings of differing degrees of modernity.[22] Here, for the sake of brevity we shall simply assert that a region composed of the U. S. Census divisions of New England, Middle Atlantic, East North Central, Pacific, and Mountain can be characterized as being more modern than one composed of the West North Central, West South Central, East South Central, and South Atlantic. We shall further assert that the central cities of the Standard Metropolitan Statistical Areas (SMSAs) of the Bureau of the Census are more modern, than are the rings of SMSAs, which are more modern than non-SMSA settings. Finally, we shall assert that school neighborhoods which are largely white collar in their adult compositions are more modern than those which are predominantly blue collar or farm.

Our measure of the specialization of organizational input for senior high schools focuses on the specialized training of the schools' faculties. It is measured by the proportion of full-time faculty

members who hold at least a master's degree. The measure of effectiveness of organizational output focuses on the production of students seeking further formal education consistent with the requirements of the larger society. It is represented by the proportion of previous tenth graders who, after the twelfth grade, go directly on to some form of further schooling. Such a measure of output takes into account not only graduates who go on, but also adjusts for the former tenth graders who have dropped out.

A sample of three- and four-year public senior high schools was obtained from data collected by the U. S. Bureau of the Census during the 1965-66 school year as one phase of the Equality of Educational Opportunity (EEO) survey of the U. S. Office of Education.[23] To accomplish one of the minor objectives of the EEO survey, the October, 1965 educational supplement of the monthly Current Population Survey (CPS) of the Bureau of the Census was expanded to learn the enrollment status of the 28,000 persons age 6-19 in the CPS national sample of households.[24]

In addition to learning the enrollment status of these individuals, the CPS also learned the identity of the elementary or secondary school then being attended by the enrollees and last attended by the nonenrollees. In this way the 10,500 public and private elementary and secondary schools most recently attended by these 28,000 persons were identified.

A precoded questionnaire was then mailed to the chief administrative officer of each school. This questionnaire requested information about the school relevant to an exploration of educational opportunity (e.g., the type of control, the number of students in attendance, the percentage of students who are Negro, the percentage who are Catholic, etc.). Completed questionnaires were returned by 7771 (73%) of the schools, of which 6333 were public, and 1212 Roman Catholic.[25] The test of the current three hypotheses involves only 1124 public three- and four-year senior high schools, drawn from this sample.

Test of Specimen Hypotheses

To test Hypothesis One the mean proportion of teachers holding at least a master's degree has been computed within each of twelve sociocultural context categories defined jointly by the two regional, three metropolitanizational, and two social class categories noted earlier.[26] As predicted by the hypothesis the largest proportion of such teachers (52.6 per cent) is found in the most modern context (that characterized as being 1) of high social class, 2) in the central city, 3) in the more modern region) and the smallest proportion (29.8 per cent) is found in the least modern sociocultural context (that characterized as being 1) of low social class, 2) in non-metropolitan areas, 3) in the less modern region) (Table 1). In

(Table 1 about here)

addition, for all six possible social class context comparisons holding constant both region and metropolitanization, the high social class category has a larger percentage of teachers with at least a

master's degree than does the low social class category. For all four possible metropolitanizational context comparisons holding constant both region and social class, the central city has a higher proportion of teachers with at least a master's degree than does the ring, which in turn has a higher proportion than does the non-metropolitan areas. Further, for all six possible regional comparisons holding constant both metropolitanization and social class, the more modern region has a higher proportion of such teachers than does the less modern region (Table 1).

In order to summarize the independent main effects of each of these three sociocultural context variables on the organizational input of schools, a least-squares regression analysis was performed with dummy main effects and interaction terms pivoted on the least modern sociocultural contexts (see Table 2 for all operational definitions).[27] The results of this analysis are presented in Table

(Table 2 about here)

3, and serve to clarify what was suggested in Table 1. Each socio-

(Table 3 about here)

cultural context makes a significant independent contribution to the explanation of variation in organization input, while none of the interaction terms is significant (Table 3). Thus Hypothesis One receives clear support.

To test Hypothesis Two the mean proportion of former tenth-grade students going directly on to any form of further formal schooling has been computed within each of the twelve sociocultural contexts.

Although the mean of 62.1 per cent for the most modern of these contexts is clearly greater than that of 47.1 per cent for the least modern, the results are not as systematic as in the case of organizational input (Table 4). Nevertheless, for all six possible social

(Table 4 about here)

class context comparisons holding constant both region and metropolitanization, the high social class category has a larger percentage of students going on to further schooling than does the low social class category. For five of six regional comparisons holding constant both metropolitanization and social class, the more modern region has a higher proportion of such students than does the less modern region. However, the pattern varies greatly across the four possible metropolitanizational context comparisons holding constant both region and social class. For the high social class schools of the less modern region the predicted relationship is observed, but for the low social class schools of the same region just the opposite occurs. For schools in both high and low social class contexts of the more modern region, the ring has the highest proportion of students going on, followed by the central city, and then by non-metropolitan areas. Clearly with respect to the organizational output of schools there is an interaction between metropolitanizational context and the other two sociocultural contexts.

In order to summarize the independent main and interactional effects of each of the three sociocultural contexts on the organizational output of schools a least-squares regression analysis was

again performed. These results, presented in Table 5, clarify what

(Table 5 about here)

was suggested in Table 4. Although the independent main effects of regional and social class context are each significant, the effects of the metropolitanizational context is primarily through its interaction with the other two contexts (Table 5). Nevertheless, considerable support for Hypothesis Two is apparent. What is also noteworthy is the rather strong interaction effect of the central city in combination with low social class (I_2S_1). Here we can see the suppressing effect of the urban ghetto upon educational attainment.

In order to test Hypothesis Three the zero-order Pearsonian product moment correlation of the measures of organizational input and output was computed within each of four social class contexts which have been assumed to vary in their degree of modernity.[28] In this way we could examine the strength of the input-output relationship within several different sociocultural contexts. Table 6 presents

(Table 6 about here)

the results. In the lowest of the four social class contexts the input-output relationship is -.07, while in those of increasingly higher social class context it is .17, .18, and .23, respectively. Since the results vary as predicted, and are unlikely to be the result of chance factors, support is claimed for Hypothesis Three.

Summary

Specimen hypotheses were proposed regarding the relationship of the sociocultural context of schools to organizational inputs, outputs,

and input-output relations. Specifically, it was hypothesized that the more modern the sociocultural context in terms of region, metropolitanization, and social class; a) the more specialized the inputs, b) the more efficient the output, and c) the stronger the relationship between input and output. Results of an analysis of 1124 public three- and four-year senior high schools supported our input hypothesis. The output hypothesis was supported for region and social class contexts. However, it was not supported for metropolitanization. Subsequent analysis revealed that while the region and social class context effects upon the school were direct, the effect of metropolitanization was primarily through its interaction with social class. The hypothesis concerning the strength of the input-output relationship was tested using social class context only, and was supported.

DISCUSSION

This paper has reported some specimen results of an analysis of the relationship between the school as a social organization and the sociocultural context in which it exists. The larger study of which this is a part provides many additional examples of the relationship of the sociocultural context of schools to their organizational structure and functioning. Although the empirical portion of all of our analyses utilizes data collected for other purposes and possesses the usual shortcomings of such secondary analysis, we believe the results have implications for theoretical, methodological, and substantive concerns in the sociology of education.

On the theoretical level, we have, in the time allocated, endeavored to set forth a model of the school in society that incorporates two major concepts not generally considered simultaneously by those interested in the sociological study of education. These are "modernization" and "open social system". We feel that our efforts to intergrate these two concepts have been worthwhile for they have helped us to focus on some important dimensions of the environment of public schools in American society. We expect we have just begun to scrape the surface in this endeavor. An elaboration and extension of our consideration of the American public school as an open social system within sociocultural contexts of varying modernity can be carried out, and can shed additional light on the structure and functioning of the American public school.

With respect to methodology we believe that we have avoided two major limitations of past sociological research on the school as a formal organization. the tendency to overgeneralize from case studies of a few schools, and the use of students as the unit of analysis when the primary focus is on the school. By combining, within a large sample of schools, the span of survey research and the parsimony of multivariate regression statistics we have been able to examine systematically relationships between variables conceptualized, measured, and analyzed <u>at the level of the school itself</u>. This approach also appears to warrant elaboration and extension.

Although the general theoretical and methodological innovations of our endeavor seem to us important, perhaps the most crucial result

of our total effort is the support this research offers for the hypothesis that the sociocultural context has a systematic influence upon the school. By identifying an important characteristic of a school's environment (the extent to which that environment has been influenced by the modernization process) inputs, outputs and the input-output relationship have been shown to vary systematically from one sociocultural context to another. Our total findings suggest that the issue of environmental effects on the school is not whether the social context influences the organization, but rather what aspects of the sociocultural context have an influence upon the school and in what manner that influence is expressed.

There are many substantive implications from our findings for both basic and applied concerns. For example, our total research effort suggests that the question of "inequality of educational opportunity" probably needs to be reconsidered with greater emphasis on the organization-community relationship--past research has tended to focus primarily on the individual's potential for educational attainment. For if the logic of our model holds, significant changes in the structure and functioning of the American public school are greatly dependent upon the sociocultural context in which the school exists. The pouring of extraordinary money, teacher talent, curricula, etc. into public schools in "depressed areas" undoubtedly has a useful short-run effect, but if our interpretations are correct, it will prove inadequate in the long-run without significant changes in the values and ideology of the sociocultural context in which the school exists as an open social system.

Perhaps even more important are implications related to the old arguement of the school's role as an agent of change within the larger American society. This issue must be recast when the school is viewed as an open social system, for within such a framework there is a high degree of reciprocity between school and environment. However, this reciprocity is severely constrained by the ideology and values dominant in the sociocultural context in which the school is controlled. We would argue that the community probably permits the school to be a change agent only to the extent that it wants to be so changed. The widely cited lack of success of the school as an agent of change in the urban ghetto speaks clearly to the school's dependence as an organization upon sociocultural factors currently beyond its control. If our reasoning and interpretations are valid the reform of public schools in the less modern areas of America through local initiative is likely to be a very slow and sporadic process. On the other hand, future efforts to reform public schools in the less modern sections of American society from a central (primarily federal) level will be greatly resisted and eventually evaded by the more traditional sociocultural content in which such schools are located. On the basis of reasoning and data in addition to that presented in this paper we suggest that the greatest change in the structure and functioning of the American public school in less modern areas will come from neither local, state nor federal initiative <u>focused directly upon the schools</u>, but rather from external forces which can modify the sociocultural context in which these schools exist. We suspect that until the local

environment which supports, maintains, and controls the American public school can be changed, little widespread change can be made in the structure of the school itself.

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Robert E. Herriott and Benjamin J. Hodgkins

Center for the Study of Education
Institute for Social Research
Florida State University

TABLES

* A paper presented at the 1968 Annual Meeting of the American Sociological Association, Boston, Massachusetts, August 29, 1968. The analysis of the data reported herein was supported in part by the U. S. Office of Education through Grant No. OEG-2-6-062972-2095.

Table 1. Mean Per Cent of Senior High School Teachers with at least a Master's Degree by Sociocultural Context.

Sociocultural Context			Mean Per Cent	Number of Schools
Region	Metropolitanization	Social Class		
More Modern	Central City	High	52.6	109
		Low	43.3	98
	Ring	High	47.9	233
		Low	38.1	142
	Non-Metro.	High	37.4	59
		Low	32.4	65
Less Modern	Central City	High	44.7	45
		Low	34.8	32
	Ring	High	40.9	89
		Low	33.6	50
	Non-Metro.	High	34.9	74
		Low	29.8	128
All Contexts			40.6	1124

TABLE 2. Definition of Dummy Sociocultural Context Main Effects and Interaction Terms.

Variable	Original Variable: Category	Original Variable: Symbol	Dummy Variable: Value	Dummy Variable: Interpretation
Main Effects				
Region	NE, MA, ENC, M, P	R_1	1	Modern
	SA, EXC, WSC, WNC	-	0	Not Modern
Social Class	35-100% White Collar	S_1	1	High Social Class
	0-34% White Collar	-	0	Not High Social Class
Metropolitanization	Central City	-	0	Not Ring
	Ring	M_1	1	Ring
	Non-SMSA	-	0	Not Ring
Metropolitanization	Central City	M_2	1	Central City
	Ring	-	0	Not Central City
	Non-SMSA	-	0	Not Central City
Interaction Terms				
Region-Ring	$R_1=0, M_1=0$	-	0	
	$R_1=0, M_1=1$	R_1M_1	1	
	$R_1=1, M_1=1$	-	0	
	$R_1=1, M_1=0$	R_1M_1	1	
Region-Central City	$R_1=0, M_2=0$	-	0	
	$R_1=0, M_2=1$	R_1M_2	1	
	$R_1=1, M_2=1$	-	0	
	$R_1=1, M_2=0$	R_1M_2	1	

Table 2. Continued

Original Variable			Dummy Variable	
Variable	Category	Symbol	Value	Interpretation
Region-Social Class	$R_1=0$, $S_1=0$	-	0	
	$R_1=0$, $S_1=1$	R_1S_1	1	
	$R_1=1$, $S_1=1$	-	0	
	$R_1=1$, $S_1=0$	R_1S_1	1	
Ring-Social Class	$M_1=0$, $S_1=0$	-	0	
	$M_1=0$, $S_1=1$	M_1S_1	1	
	$M_1=1$, $S_1=1$	-	0	
	$M_1=1$, $S_1=0$	M_1S_1	1	
Central City-Social Class	$M_2=0$, $S_1=0$	-	0	
	$M_2=0$, $S_1=1$	M_2S_1	1	
	$M_2=1$, $S_1=1$	-	0	
	$M_2=1$, $S_1=0$	M_2S_1	1	

Unstandardized Regression Equation:

$$\hat{Y}_i = a + r_1R_1 + s_1S_1 + m_1M_1 + m_2M_2 + (r_1m_1)(R_1M_1) + (r_1m_2)(R_1M_2) + (r_1s_1)(R_1S_1) + (m_1s_1)(M_1S_1) + (m_2s_1)(M_2S_1).$$

where:

$\hat{Y}_i$ = predicted mean on the dependent variable for the ith cell
a = predicted mean for the pivotal (least modern) cell
r_1, s_1, m_1, and m_2 = unstandardized regression coefficients for the main effects
(r_1m_1), (r_1m_2). . . (m_2s_1) = unstandardized regression coefficients for the interaction terms

Table 3. Eighth-order Unstandardized Regression Coefficients for the Relationship of Sociocultural Context and Per Cent of Senior High School Teachers with at least a Master's Degree.

Sociocultural Context Variable[a]	Coefficients (N=1124)
Main Effects	
Modern Region (R_1)	7.0*
Ring (M_1)	6.5*
Central City (M_2)	10.3*
High Social Class (S_1)	9.1*
Interaction Terms	
R_1M_1	- 1.6
R_1M_2	- 2.7
R_1S_1	- 0.4
M_1S_1	- 1.8
M_2S_1	- 2.0
Predicted Mean for Least Modern Cell	29.9
F-Ratio	14.8*
Multiple R	.33

[a] See Table 2 for the operational definition of each variable.

*$p < .05$

Table 4. Mean Per Cent of Senior High School Tenth-Grade Entrants Going Directly on to any Further Education by Sociocultural Context.

Sociocultural Context			Mean Per Cent	Number of Schools
Region	Metropolitanization	Social Class		
More Modern	Central City	High	62.1	94
		Low	41.6	90
	Ring	High	64.4	221
		Low	50.6	135
	Non-Metro.	High	51.6	56
		Low	50.0	60
Less Modern	Central City	High	59.6	42
		Low	38.5	27
	Ring	High	57.7	82
		Low	43.2	42
	Non-Metro.	High	56.7	62
		Low	47.1	98
All Contexts			54.3	1009

Table 5. Eighth-order Unstandardized Regression Coefficients for the Relationship of Sociocultural Context and Per Cent of Senior High School Tenth-Grade Entrants Going Directly on to any Further Education.

Sociocultural Context Variable[a]	Coefficients (N=1009)
Main Effects	
Modern Region (R_1)	5.2*
Ring (M_1)	2.6*
Central City (M_2)	- 0.9
High Social Class (S_1)	18.1*
Interactions	
R_1M_1	- 4.1*
R_1M_2	- 1.9
R_1S_1	1.6
M_1S_1	- 4.4*
M_2S_1	- 7.8*
Predicted Mean for Least Modern Cell	47.9
F-Ratio	24.8*
Multiple R	.43

[a]See Table 2 for the operational definition of each variable.

*$p < .05$

Table 6. Zero-order Pearsonian Product-Moment Correlation Coefficients for the Relationship of Organizational Input and Output, by Four Social Class Context Categories.

Social Class Content Category	Zero-Order r-coefficient[c]	Number of Schools	Input[a]		Output[b]	
			Mean	S.D.	Mean	S.D.
High (60-100% WC)	.23	240	50.4	22.4	68.2	16.5
Moderately High (35-59% WC)	.18	267	40.5	20.3	53.2	15.3
Moderately Low (20-34% WC)	.17	282	37.6	19.3	48.6	17.4
Low (0-19% WC)	-.07	116	35.3	23.1	40.1	15.5

[a]Input is measured by the proportion of teachers in each school who hold at least a master's degree.

[b]Output is measured by the proportion of previous tenth graders in each school who after the twelfth grade go directly on to some form of further schooling.

[c]The probability of the predicted rank ordering occurring purely by chance by random sampling from a population of identical coefficients is .041.

FOOTNOTES

1. Neal Gross, "Sociology of Education," Sociology in the United States of America: A Trend Report edited by Hans L. Zetterberg (Paris: UNESCO, 1956), p. 64; Charles E. Bidwell, The School as a Formal Organization," Handbook of Organizations edited by Robert E. L. Faris (Chicago: Rand McNally and Company, 1965), p. 972.

2. See, for example, Jesse Burkhead, Input and Output in Large-City High Schools (Syracuse, New York: Syracuse University Press, 1967); Roger G. Barker and Paul V. Gump, Big School, Small School: High School Size and Student Behavior (Stanford, California: Stanford University Press, 1964).

3. Robert E. Herriott and Benjamin J. Hodgkins, Sociocultural Context and the American School: An Open-Systems Analysis of Educational Opportunity, USOE Final Report No. 6-2972 (Washington, D.C.: U.S. Department of Health, Education,and Welfare, 1968).

4. See, for example, Lyle W. Shannon, "Socio-Economic Development and Political Status," Social Problems (Fall, 1959), Vol. 7, pp. 157-169; R. B. Cattell, H. Breul and H. Parker Hartman, "An Attempt at More Refined Definition of Syntality in Modern Nations," American Sociological Review (August, 1952), pp. 408-421; Leo F. Schnore, "The Statistical Measurement of Urbanization and Economic Development,"Land Economics (August, 1961), Vol. 37, No. 3, pp. 229-245.

5. For a most interesting discussion of this relationship, see Nathan Keyfitz, "The Impact of Technological Change on Demographic Patterns," in Industrialization and Society edited by Bert F. Hoselitz and Wilbert E. Moore (New York: UNESCO, 1963), pp. 213-236.

6. H. Gerth and C. Wright Mills, translators and editors, From Max Weber: Essays in Sociology (New York: Oxford University Press, 1946),pp. 426-434.

7. For an excellent discussion of the distinction between family and school as socializing agencies, see Robert Dreeben, On What is Learned in Schools (Reading, Massachusetts: Addison-Wesley Company, 1968), particularly Chapters Two and Three.

8. Interestingly enough, examples of the successful end product of this experience are not seen as particularly desirable by many contemporary writers. We refer here to the negative connotations surrounding "the white collar man," "the organization man," or "the bureaucrat." And yet, as many students of the problem have argued, this type of personality configuration seems necessary in order to operate within the modern complex bureaucratic milieu.

9. Durkheim has expressed essentially the same view in defining education's role in society, although the meaning of his definition has never been systemmatically explored for modern society. Durkheim defines education's role as ". . . to arouse and to develop in the child a certain number of physical, intellectual and moral states which are demanded of him by both the political society as a whole and the special milieu for which he is specifically destined." See Emile Durkheim, Education and Sociology, translated by Sherwood D. Fox (Glencoe, Illinois: The Free Press of Glencoe, 1950), p. 71.

10. Gerth and Mills, op. cit., p. 426.

11. Ibid.

12. See, for example, Eric Ashby, African Universities and Western Culture (Cambridge, Massachusetts: Harvard University Press, 1964).

13. Francis R. Allen and W. Kenneth Bentz, "Toward the Measurement of Sociocultural Change, Social Forces, Vol. 43, No. 4 (May, 1965), pp. 522-532; C. Arnold Anderson and Mary Jane Bowman, "Educational Distributions and Attainment Norms in the United States," Proceedings: World Population Conference, 1954, United Nations Publication, New York, 1955, pp. 931-942; John Gillin, "National and Regional Cultural Values in the United States," Social Forces, Vol. 34, No. 2 (December, 1955), pp. 107-113.

14. Following Katz and Kahn, we are distinguishing here between intrinsic functions necessary for the maintenance of the organization and extrinsic functions which are performed by the organization as a part of a larger social system. Geneotypic in this instance refers to the primary function as determined by the organizations' institutional role. See, Daniel Katz and Robert Kahn, The Social Psychology of Organizations (New York: John Wiley and Sons, 1966), p. 62.

15. Walter Buckley, Sociology and Modern Systems Theory (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1967).

16. Gordon W. Allport, "The Open System in Personality Theory," Journal of Abnormal and Social Psychology, Vol. 61 (1960), pp. 301-311.

17. Ludwig von Bertalanffy, Modern Theories of Development (New York: Harper and Row, 1962).

18. We are using ideology and values in the Parsonian sense, i.e. an ideology is a ". . . system of beliefs held in common by members of a collectivity", with some level of commitment as an aspect of group membership; values are elements ". . . of a shared symbolic system which serves as . . . criterion of standard(s) of selection among the alternatives of orientation which are intrinsically open in a situation . . .". See, Talcott Parsons, The Social System (Glencoe, Illinois: The Free Press of Glencoe, 1951), p. 349 and p. 12.

19. These generalizations are derived essentially from Parson's discussion of the 'Universalistic-Achievement pattern'. Ibid., pp. 132-191.

20. An excellent discussion of traditional society is set forth in Bert F. Hoselitz, "Main Concepts in the Analysis of the Social Implications of Technical Change," Industrialization and Society edited by Bert F. Hoselitz and Wilbert E. Moore (Paris: UNESCO, 1963), pp. 11-31.

21. Herriott and Hodgkins, op. cit.

22. Ibid., Chapter 8.

23. For the larger study of which this was a minor part, see James S. Coleman, et al., Equality of Educational Opportunity, Vols. 1 and 2 (Washington, D. C.: U. S. Government Printing Office, 1966).

24. For the results of this research, see Charles B. Nam, A. Lewis Rhodes and Robert E. Herriott, Inequalities in Educational Opportunities: A Demographic Analysis of Educational Differences in the Population (Tallahassee, Florida: Florida State University, 1966), Sections E-F. This report has been summarized in Coleman, et al., op. cit., Chapter 6.

25. Neither the target sample nor the resulting one is in any sense a random probability sample of American schools. However, the sample is large (approximately 6 per cent of all American schools). An extensive analysis of non-response has been conducted and suggests that whatever bias may exist within the sample has lead to an underestimate of relationships rather than an overestimation. See Merriott and Hodgkins, op. cit., Appendix A.

26. The operational definition of sociocultural context categories is as follows:
    1) Region: a) more modern: New England (NE), Middle Atlantic (MA), East North Central (ENC), Pacific (P), and Mountain (M); b) less modern: South Atlantic (SA), East South Central (ESC), West South Central (WSC), and West North Central (WNC).
    2) Metropolitan: a) Central City of SMSA, b) Ring of SMSA, c) non-SMSA
    3) Social Class: a) High: 35-100% white collar fathers as estimated by the school principal, b) low: 0-34% white collar fathers. (The split was made at the median across all 7771 schools in the larger study.)

27. For a technical discussion of this procedure, see Daniel B. Suits, "Use of Dummy Variables in Regression Equations," Journal of the American Statistical Association, LII (1957), pp. 548-551; M. Davies, "Multiple Linear Regression Analysis with Adjustment for Class Differences," Journal of the American Statistical Association, LVI (1951), pp. 729-735; Emanuel Melichar, "Least-Squares Analysis of Economic Survey Data," a paper presented at the 1965 Annual Meeting of the American Statistical Association; J. Johnston, Econometric Methods (New York: McGraw-Hill Book Company, 1963), pp. 221-230. For social science applications, see, for example, Guy H. Orcutt, et al., Microanalysis of Socioeconomic Systems (New York: Harper Brothers, 1961), pp. 215-231; James N. Morgan, et al., Income and Welfare in the United States (New York: McGraw-Hill Book Company, 1962), ad passim; or Alan B. Wilson, "Social Stratification and Academic Achievement" in Education in Depressed Areas edited by A. Harry Passow (New York: Bureau of Publications, Teachers College, Columbia University, 1963), pp. 217-235.

28. In order to present relatively stable correlation coefficients only one sociocultural context variable was utlized for this analysis.